التوصيف الكيميائي لبعض المراجين الرخوة من البحر الأحمر

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المستخلص

تم فصل أربع مركبات جديدة من التربينات الثنائية تحتوي على حلقة بيران من مرجان البحر الأحمر الرخو ساركوفيتون جلوكوم (**١٩٤،١٩٥،١٩٧،١٩٩**) بالإضافة إلى عشرة مركبات معروفه: أربعة من التربينات النصف ثلاثية(**1,2,193,196**) وخمسة من التربينات الثنائية (**21, 38, 62, 80, 81**) و واحد من طائفة الستيرويدات (**198**). تم دراسة فعالية المركبات الجديدة على الخلايا السرطانية الكبد والقولون والثدي. أظهر ان المركبان **١٩٤** و**١٩٥** فعالية عالية على الثلاثة أنواع.

Chemical Characterization of Some Red Sea Species Belong to the Alcyonacea

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Abstract

Four new pyran-based cembranoid diterpenes (**194**, **195**, **197** and **199**) along with ten known compounds including four sesquiterpenoids (**1**,**2**,**193**,**196**), five diterpenoids (**21**, **38**, **62**, **80**, **81**), and a C_{30} steroid gorgosterol (**198**) were isolated from the Red Sea soft-bodied coral *Sarcophyton glaucum*. Sarcoglauphine A (**194**) and B (**195**) are conformers around the single bond C-6/C-7, while sarcotrocheliol-B acetate (**199**) and sarcotrochelione (**197**) are functional isomers at C-7. The chemical structures of the isolated compounds were obtained by extensive interpretation of the measured spectroscopic spectra. The sesquiterpenoid compound naphthalene, 1, 2-dihydro-4,7-dimethyl-1-(1-methylethyl) (**196**) was isolated for the first time from *Sarcophyton* sp., this could be as chemotaxonomy marker for *Sarcophyton*. The cytotoxicity of compounds (**194**, **195**, **197**, **199**) on viability of HepG2, MCF-7, and HCT116 cell lines was assessed by Sulphorhodamine B (SRB) method. Doxorubicin was used as positive control and its mean *IC*50 against HepG2, MCF-7, and HCT116 cells was 3.5, 2.4 and 6

μM, respectively. The obtained results showed that most of the activity was observed for compound (**194**) with mean IC_{50} of 60, 49.9 and 35 μM and compound (**195**) with mean IC_{50} of 57.1, 54.07 and 35.82 μM against HepG2, MCF-7 and HCT116 cell lines, respectively. The crystal and molecular structure of sarcotrocheliol (**81**) was determined using single crystal X-ray and NMR methods. Crystallography showed that the molecule is crystalline as a monoclinic, space group of P212121, with the a = 9.20(4) Å, b = 10.80(4) Å, c = 19.99(9) Å. ^{1}H, ^{13}C and DEPT-135 NMR measurements of sarcotrocheliol are reported in four different deuterated solvents; $CDCl_3$, CD_3CN, $MeOD_4$ and DMSO-d6.